Summary of Data Received for the Heavy Duty Alternative Fuel Vehicle Project as of 1 February 1997

Total Number of Vehicle Weeks of Data Received

		Weeks of Data Received
CNG	(57 vehicles)	2,941
LPG	(3 vehicles)	115
Methanol	(1 vehicle)	48
Soydiesel	(4 vehicles)	389
Control	(17 vehicles)	734
Total	(82 vehicles)	4,227

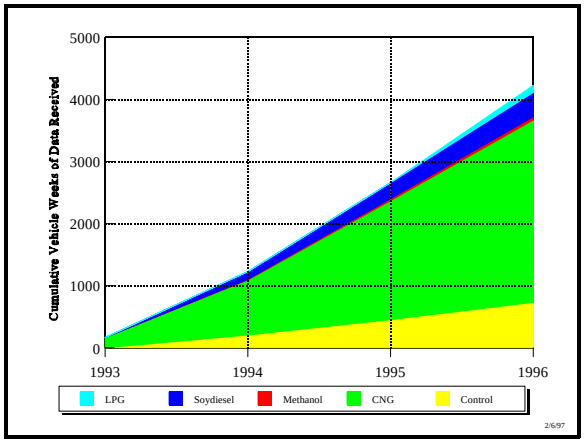

Figure 1 Vehicle Weeks of Data Received by Fuel Type

Total Miles Traveled

		Miles Traveled
CNG	(57 vehicles)	1,106,344
LPG	(3 vehicles)	12,948
Methanol	(1 vehicle)	23,410
Soydiesel	(4 vehicles)	173,142
Control	(17 vehicles)	236,545
Total	(82 vehicles)	1,552,389

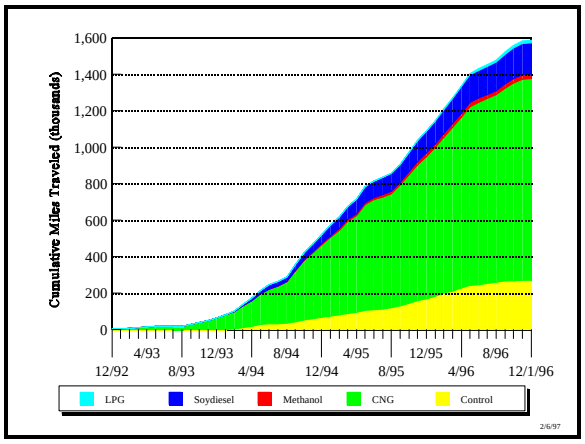

Figure 2 Cumulative Miles Traveled by Fuel Type

Average Miles Traveled per Day

		Average Miles per Day
CNG	(57 vehicles)	69.8
LPG	(3 vehicles)	37.5
Methanol	(1 vehicle)	61.3
Soydiesel	(4 vehicles)	81.7
Control	(17 vehicles)	59.8
Total	(82 vehicles)	62.0

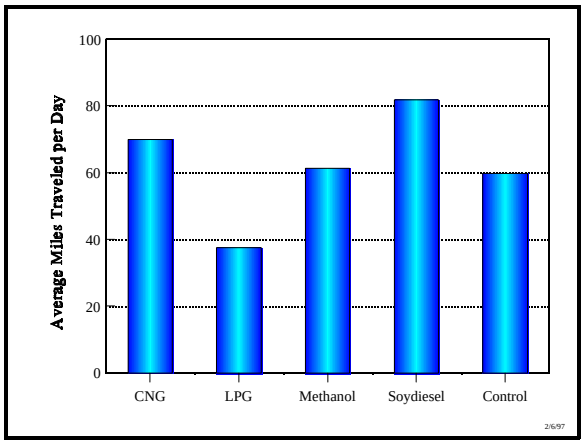

Figure 3 Average Miles Traveled Per Day by Fuel Type

Summary of Data Received for the Heavy Duty Alternative Fuel Vehicle Project as of 1 February 1997

Average Number of Days Between Refuelings

		Days Between Refuelings
CNG	(57 vehicles)	2.2
LPG	(3 vehicles)	7.7
Methanol	(1 vehicle)	5.7
Soydiesel	(4 vehicles)	3.7
Control	(17 vehicles)	4.5
Total	(82 vehicles)	4.8

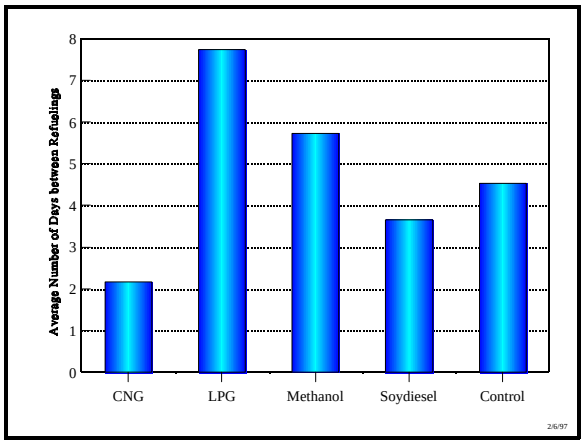

Figure 4 Average Days between Refuelings by Fuel Type

Total Quarts of Oil Added

		Oil Added (Quarts)
CNG	(57 vehicles)	856.9
LPG	(3 vehicles)	16.0
Methanol	(1 vehicle)	19.0
Soydiesel	(4 vehicles)	15.0
Control	(17 vehicles)	60.0
Total	(82 vehicles)	966.9

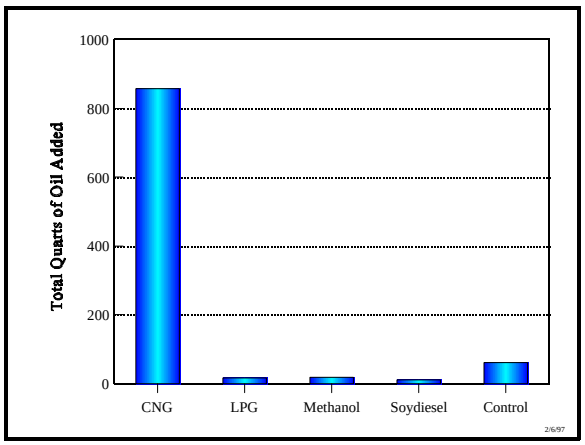

Figure 5 Quarts of Oil Added by Fuel Type

Total Amount of Fuel Used

		Gasoline (gal)	Diesel (gal)	CNG (gasoline eq gal)†	LPG (gal)	Methanol (gal)	Soy-diesel (gal)
CNG	(57 vehicles)		9,822	114,648			
LPG	(3 vehicles)				4,694		
Methanol	(1 vehicle)					7,386	
Soydiesel	(4 vehicles)		7,203				16,793
Control	(17 vehicles)	3,959	31,352				
Total	(82 vehicles)	3,959	48,377	114,648	4,694	7,386	16,793

† Also reported were many readings in PSI.

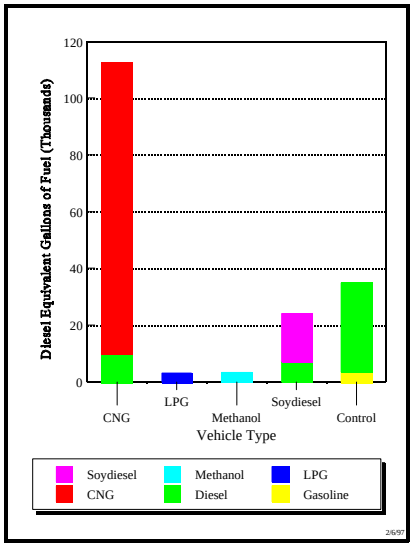

Figure 6 Fuel Quantities Used (Diesel Equivalent Gallons)

Summary of Data Received for the Heavy Duty Alternative Fuel Vehicle Project as of 1 February 1997

Average Fuel Economy

Engine Type and Fuel	*CNG (mi/diesel eq gal)*	*CNG/Dsl (mi/diesel eq gal)*	*LPG (mi/diesel eq gal)*	*M100 (mi/diesel eq gal)*	*Soydiesel (mi/SD gal)*	*Diesel (mi/diesel gal)*	*Gasoline (mi/gsln gal)*
Cummins B5.9G CNG (3 veh.)	3.96						
Cummins C8.3G CNG (3 veh.)	4.65						
Cummins L10G CNG (4 veh.)	2.63						
Detroit Diesel 30G CNG (2 veh.)	2.93						
GMC 7 Liter CNG (4 veh.)	4.20						
Hercules GTA 5.6 CNG (13 veh.)	4.69						
Tecogen Tecodrive 7000 CNG (2 veh.)	5.28						
Caterpillar 3116 CNG/Diesel (2 veh.)		7.24					
Ford 7 Liter LPG (3 veh.)			4.67				
Detroit Diesel 6V92T M100 (1 veh.)				4.48			
Cummins BTA5.9 Soydiesel (4 veh.)					6.35	6.46	
Caterpillar 3116 Diesel (2 veh.)						5.52	
Cummins FD1060 Diesel (4 veh.)						8.04	
Cummins L10 Diesel (3 veh.)						3.68	
Navistar A195 Diesel (4 veh.)						6.81	
Navistar DT466 Diesel (2 veh.)						6.62	
GMC 6 Liter Gasoline (2 veh.)							4.69
Average MPG by Fuel (53 veh.)	4.05	7.24	4.67	4.48	6.35	6.19	4.69

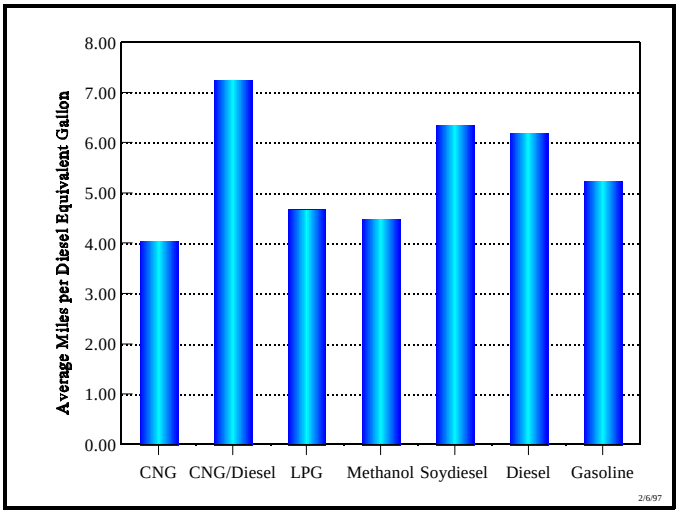

Figure 7 Diesel Equivalent Fuel Economy by Fuel Type

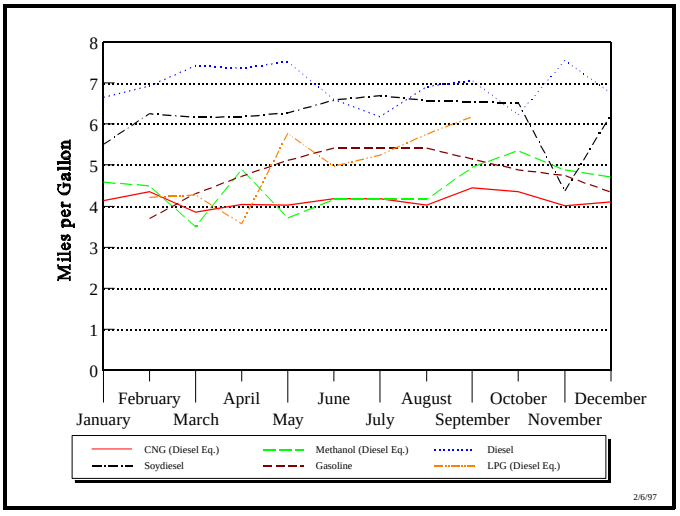

Figure 8 Fuel Economy Trends by Season

Driveability Comments

		CNG (57 vehicles)	*LPG (3 vehicles)*	*Methanol (1 vehicle)*	*Soydiesel (4 vehicles)*	*Control (17 vehicles)*	*Total (82 vehicles)*
Areas Rated as Superior	1.	Idle Quality	None	Idle Quality	None	Idle Quality	Idle Quality
	2.	Acceleration Quality		Acceleration Quality		Acceleration Quality	Acceleration Quality
	3.	Hard to Start				Hard to Start	Hard to Start
Areas Rated as Annoying or Troublesome	1.	Lack of Power	Lack of Power	Stalled In Traffic	Hard to Start	Lack of Power	Lack of Power
	2.	Acceleration Quality	Hard to Start	Stalling After Starting	Lack of Power	Acceleration Quality	Acceleration Quality
	3.	Hesitation	Stalling After Starting	Acceleration Quality	Stalling in Traffic	Stalling in Traffic	Hesitation

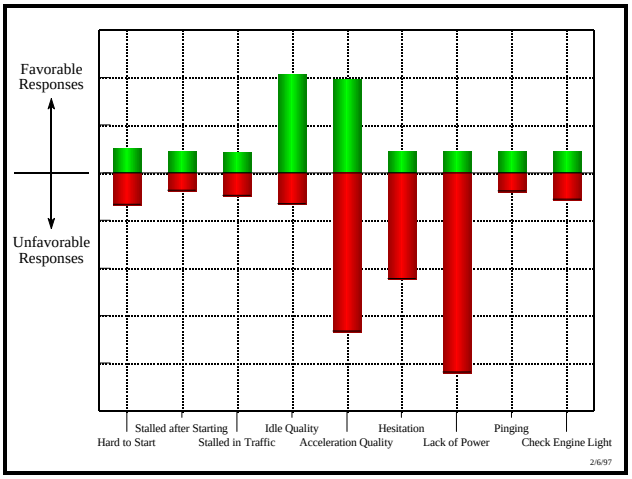

Figure 9 Driveability Complaints/Compliments by Category

Summary of Data Received for the Heavy Duty Alternative Fuel Vehicle Project as of 1 February 1997

Summary of Data Received for Heavy Duty Vehicles Outside of the DOE Program

Various agencies which are running heavy duty vehicles under DOE grants have also sent data for alternative fuel and control vehicles which are not part of the DOE grant program. The data is, however, useful, and is summarized here.

Total Number of Vehicle Weeks of Data Received

		Weeks of Data Received
CNG	(19 vehicles)	680
Control	(8 vehicles)	52
Total	(27 vehicles)	732

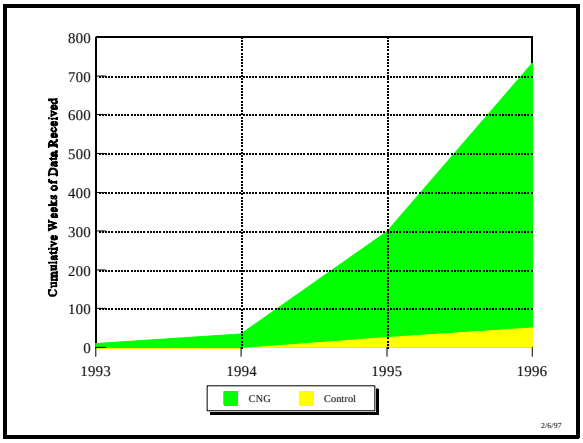

Figure 10 Vehicle Weeks of Data Received

Total Miles Traveled

		Total Miles Traveled
CNG	(19 vehicles)	327,058
Control	(8 vehicles)	26,806
Total	(27 vehicles)	353,864

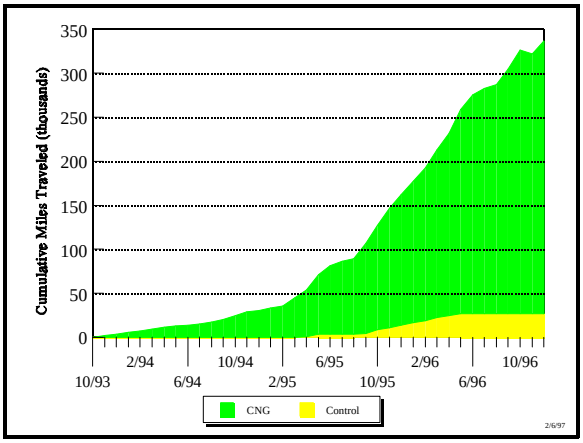

Figure 11 Cumulative Miles Traveled

Average Miles Traveled per Day

		Average Miles per Day
CNG	(19 vehicles)	75.2
Control	(8 vehicles)	84.3
Total	(27 vehicles)	79.7

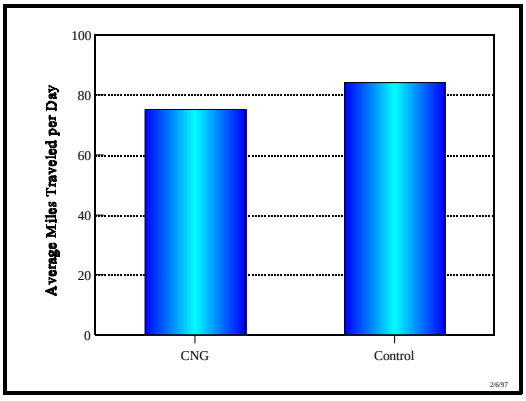

Figure 12 Average Miles Traveled per Day

Average Number of Days Between Refuelings

		Days Between Refuelings
CNG	(19 vehicles)	1.5
Control	(8 vehicles)	4.7
Total	(27 vehicles)	3.1

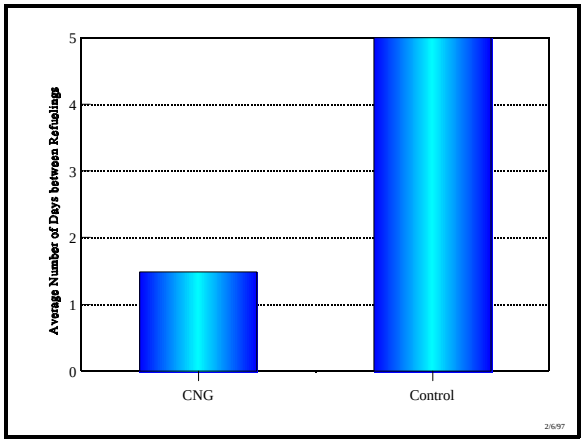

Figure 13 Average Number of Days Between Refuelings

Total Quarts of Oil Added

		Oil Added (Quarts)
CNG	(19 vehicles)	21
Control	(8 vehicles)	3
Total	(27 vehicles)	24

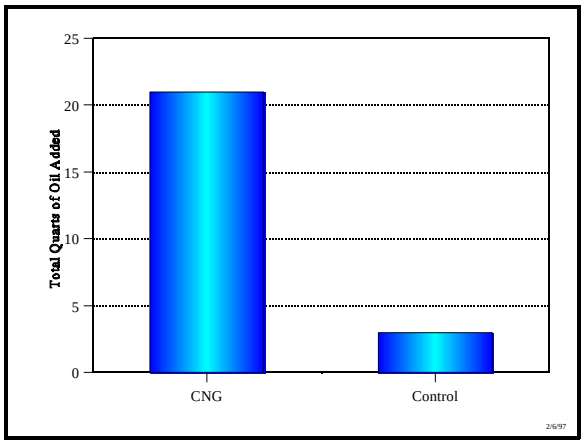

Figure 14 Quarts of Oil Added

Total Amount of Fuel Used

		Gasoline (gal)	Diesel (gal)	CNG (gasoline eq gal)
CNG	(19 vehicles)	2,557		53,803
Control	(8 vehicles)	37	2,596	
Total	(27 vehicles)	2,594	2,596	53,803

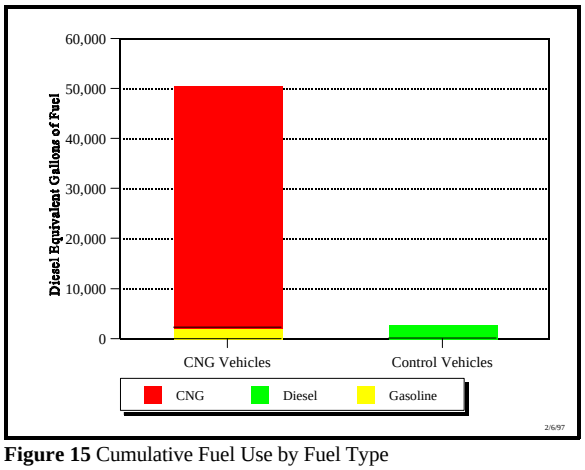

Figure 15 Cumulative Fuel Use by Fuel Type

Summary of Data Received for the Heavy Duty Alternative Fuel Vehicle Project as of 1 February 1997

Average Fuel Economy

	CNG (mi/dsl eq gal)	CNG/gsln (mi/dsl eq gal)	Diesel (mi/diesel gal)
Hercules GTA5.6 CNG (18 vehicles)	5		
CNG/Gasoline Bifuel (1 vehicle)		13.16	
Diesel (vehicles)			7.08
Average MPG by Fuel	5.02	12.94	7.08

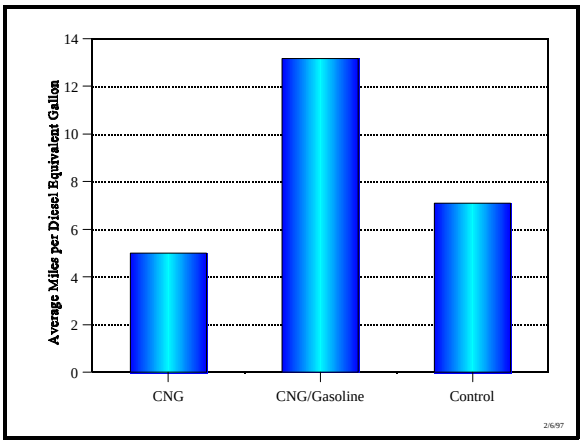

Figure 16 Average Diesel Equivalent Fuel Economy

Driveability Comments

		CNG (19 vehicles)	*Control (8 vehicles)*	*Total (27 vehicles)*
Areas Rated as Superior	1.	Idle Quality	Acceleration Quality	Acceleration Quality
	2.	Acceleration Quality	Idle Quality	Idle Quality
	3.	Hard to Start	Hard to Start	Hard to Start
Areas Rated as Annoying or Troublesome	1.	Acceleration Quality	Acceleration Quality	Acceleration Quality
	2.	Lack of Power	Lack of Power	Lack of Power
	3.	Hesitation		Hesitation

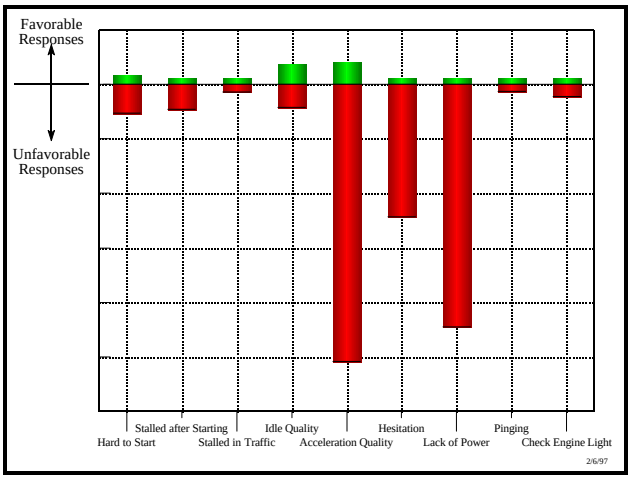

Figure 17 Comments Received for Non-DOE HD Vehicles

Location of Vehicles in the DOE HD Vehicle Program